REMARKS/ARGUMENTS

Applicant submits herewith an RCE for further examination. The final office action of March 15, 2007, and the Advisory Action mailed October 17, 2007 have been carefully reviewed. Reconsideration and allowance of the instant application are respectfully requested. Claims 2 and 4 remain pending in this application. Claims 1 and 3 have been withdrawn.

Rejections under 35 U.S.C. § 103

Claims 2 and 4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. patent no. 6,104,837 to Walker and U.S. patent no. 6,630,931 to Trika et al. ("Trika"). Applicant respectfully traverses this rejection.

To show the embedding step previously claimed, the action relied on Walker. Walker however, neither teaches nor suggests embedding the depth map data in a portion of a video signal including the 2D image data which does not obscure or overwrite the 2D image data, and *without loss of fidelity in a relative range of values in the depth map* as recited in amended claim 4.

As discussed in the last response, Walker discloses a compression method and apparatus for use in image data processing where two-dimensional pixel images have respective relative depths specified on a per pixel basis. Contextually, Walker relates to an application in which "two or three planar images form the component material with each of the images having a respective absolute depth value defined for substantially all of the pixels." (Col. 1, lines 18-21). There are important issues relating to the use of depth maps in this context.

1. There are multiple image planes, each with an associated depth map.

2. The depth map does not fully cover the entire image for each plane (e.g. "substantially"). For example, if an image plane encodes a vehicle as described in the detailed description (Col. 4, lines 21-26) then the depth map only covers the section of the image plane in which the vehicle is visible.

3. The depth value of each pixel is only used to determine which pixels from the multiple layers are visible to the user. "The STB is then responsible for generating the composite image of vehicle sprites overlying the server-supplied video background" (Col. 4, lines 29-31). That is, Walker is effectively only providing the respective depth of each frame so that a user is able to determine which objects are in the foreground and which objects are in the background.

Issue 3 is particularly pertinent when considering the use of a depth map for rendering stereoscopic images. The depth compression scheme proposed by Walker *reduces* the amount of information stored in the depth data (the volume of depth data) relative to the application of combining multiple image planes. Notably, the compression techniques described in Walker are not compatible for applications in which the depth maps are used for stereoscopic rendering. First, Walker describes assigning a common depth value to adjoining pixels of similar depth (Col. 2, lines 12-14). This technique has the undesirable effect of removing the 3D surface relief of objects and making those objects appear flat in stereoscopic 3D. Moreover, the compression utilized by Walker includes reassigning the depth values (Col. 2, lines 21-26); this process is designed to compress the information into the smallest number of bits for encoding. While the compression process has no impact on the ordering of the image planes in the context of Walker's invention, for stereoscopic 3D the compression process would effectively collapse the overall depth range down, leading to very shallow, low quality 3D stereoscopic effect. Significantly, the compression is "loss" in the sense that vital 3D geometric information is discarded in order to compress the data making it unsuitable for stereoscopic rendering. In view of the foregoing, Walker clearly does not teach or suggest embedding the depth map data in a portion of a video signal including the 2D image data which does not obscure or overwrite the 2D image data, and *without loss of fidelity in a relative range of values in the depth map* as recited in amended claim 4.

Trika describes a method of accelerating the rendering of stereoscopic images from computer graphics models by estimating one eye from the other eye and does not remedy the above noted deficiency of Walker. As such, the combination of Walker with Trika even assuming, but not conceding, its propriety would not have resulted in the claim 4 combination of features including embedding the depth map data in a portion of a video signal including the 2D image data which does not obscure or overwrite the 2D image data, and *without loss of fidelity in a relative range of values in the depth map*. For at least the reasons set forth above, claim 4 and claim 2, which depends from claim 4, are patentably distinct from the combination of Walker and Trika.

Claims 2 and 4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of U.S. patent no. 5,617,334 to Tseng et al. ("Tseng") and Trika. Applicant respectfully traverses this rejection.

To show the steps of receiving and embedding as previously claimed, the action relies on Tseng. To the extent relevant and not included below, applicant incorporates by reference the discussion of Tseng from the Request For Reconsideration filed September 17, 2007.

As discussed in the last response, depth map D_c^t is not "received" in Tseng as recited in claim 4. Instead, depth map D_c^t is *created* from the multiple viewpoint images, as described in Tseng at col. 3, lines 61-62. Thus, Tseng does not teach or suggest "receiving 2D images and depth map data of a depth map relating to the 2D images" and "responsive to the receiving, embedding" as claimed. The Advisory Action seems to acknowledge that Tseng creates the depth map data in stating that "once the depth map is created, it must be transmitted and received to be of any use." It is unclear exactly how this statement rebuts applicant's arguments in the Request For Reconsideration. Nonetheless, applicant has amended the claims to include "responsive to the receiving, embedding the depth map data" in an attempt to further clarify the differences. Tseng does not, responsive to receiving, embed the depth map data in a portion of video signal as called for in claim 4.

Trika does not cure this defect. Thus, the combination of Tseng and Trika does not teach or suggest at receiving 2D images *and depth map data* of a depth map relating to the 2D images and responsive to receiving, embedding the depth map data in a portion of a video signal as called for in claim 4. Moreover, neither Tseng nor Trika teach or suggest embedding the depth map data in a portion of a video signal including the 2D image data which does not obscure or overwrite the 2D image data, and *without loss of fidelity in a relative range of values in the depth map*.

For at least the aforementioned reasons, the combination of Tseng and Trika assuming, but not admitting, its propriety does not result in claim 4 invention. Thus, claim 4 and claim 2, which depends from claim 4, are patentably distinct from the applied art for at least the above reasons.

CONCLUSION

If any fees are required or if an overpayment is made, the Commissioner is authorized to debit or credit our Deposit Account No. 19-0733, accordingly.

All rejections having been addressed, applicant respectfully submits that the instant application is in condition for allowance, and respectfully solicits prompt notification of the same.

Respectfully submitted,

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